

IN THE CLAIMS:

Please CANCEL claims 1-3, 5, 7-10, 12 and 14 without prejudice to or disclaimer of the recited subject matter.

Please AMEND claims 4, 6, 11, 13, 15 and 16, and ADD new claims 17 and 18, as follows. For the Examiner's convenience, all claims currently pending have been reproduced below.

1-3. (Canceled)

4. (Currently Amended) A ~~method according to claim 1~~ position detecting method comprising steps of:

sensing an image of first and second marks;

orthogonally transforming a signal obtained in said sensing step; and

calculating each position of the first and second marks based on a phase of a corresponding frequency component obtained in said transforming step.

wherein patterns are disposed at a first interval in the first mark, patterns are disposed at a second interval in the second mark, and one of the first and second intervals is not an integer multiple of the other of the first and second intervals.

5. (Canceled)

6. (Original) ~~A method according to claim 1~~ position detecting method comprising steps of:

sensing an image of first and second marks;

orthogonally transforming a signal obtained in said sensing step; and

calculating each position of the first and second marks based on a phase of a corresponding frequency component obtained in said transforming step,

wherein the first mark includes two groups of patterns, in each of the two groups patterns are disposed at an interval A , the two groups are disposed at an interval nA , where n is an integer, and the second mark falls within the interval nA in the signal.

7-10. (Canceled)

11. (Currently Amended) ~~An apparatus according to claim 8~~ A position detecting apparatus comprising:

a sensing unit which senses an image of first and second marks;

a transform unit which orthogonally transforms a signal obtained by said sensing unit; and

a calculation unit which calculates each position of the first and second marks based on a phase of a corresponding frequency component obtained by said transform unit,

wherein patterns are disposed at a first interval in the first mark, patterns are disposed at a second interval in the second mark, and one of the first and second intervals is not an integer multiple of the other of the first and second intervals.

12. (Canceled)

13. (Currently Amended) ~~An apparatus according to claim 8~~ A position detecting apparatus comprising:

a sensing unit which senses an image of first and second marks;

a transform unit which orthogonally transforms a signal obtained by said sensing unit; and

a calculation unit which calculates each position of the first and second marks based on a phase of a corresponding frequency component obtained by said transform unit,

wherein the first mark includes two groups of patterns, in each of the two groups patterns are disposed at an interval A, the two groups are disposed at an interval nA , where n is an integer, and the second mark falls within the interval nA in the signal.

14. (Canceled)

15. (Currently Amended) An exposure apparatus for exposing a substrate to a pattern, said apparatus comprising:

a position detecting apparatus as defined in claim ~~[[8]]~~ 11.

16. (Currently Amended) A device manufacturing method comprising:

a step of exposing a substrate to a pattern using an exposure apparatus as defined in claim 15.

17. (New) An exposure apparatus for exposing a substrate to a pattern, said apparatus comprising:

a position detecting apparatus as defined in claim 13.

18. (New) A device manufacturing method comprising:

a step of exposing a substrate to a pattern using an exposure apparatus as defined in claim 17.